

Your Ref.: PCT/SG2004/000210
 Our Ref.: NANY/20401156/KC/mt

IAP9 Rec'd PCT/PTO 25 JAN 2006

8 February 2005

Attn: Mr Bayer Mitrovic
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Dear Sirs

PCT International Application No.: PCT/SG2004/000210
Title: AN APPARATUS AND METHOD FOR GENERATING
 UNIFORM PLASMAS
Applicant: NANYANG TECHNOLOGICAL UNIVERSITY

We refer to the International Search Report and the Written Opinion dated 21 September 2004.

We have carefully considered the claims of the subject application and the two cited documents

[1] US Patent US 6501447 B1 (Kang et al.) 31 December 2002

[2] Ganter et al. "Efficiency of AC plasma display panels from diagnostics and models", Appl. Surf. Sci., vol. 192, no. 1, pp. 299-308 (2002) (preprint from www.iquesta.com/articles/plasma.pdf)

We respectfully disagree with the examiner's assessment of novelty inventive step as the citations are not relevant to the invention as claimed.

When one considers the citations, they disclose plasma devices and means of generating a uniform plasma using configurations of AC plasma panels employing plasma discharges between two electrodes that may be parallel or perpendicular.

If one considers the invention as claimed in the present application, it makes no reference to electrodes. That is because there are no electrodes in the invention as claimed. Instead, claim 1 refers to two perpendicular unidirectional oscillating RF current sheets. In the preferred embodiment shown in Figs. 1 and 2, the currents are driven through perpendicular sets of wires reconnected in a way shown in Fig. 3. This is an antenna, not an electrode. This is claimed in claim 15. The examiner has mistaken the antenna for an electrode. Furthermore, the description of the preferred embodiment continually refers to the "antenna arrangement 30" from page 9 onwards. Those are the word also used in claim 15.

Furthermore, it is a common feature of AC plasma discharges in electrode-featuring configurations (this is the case in references 1 and 2) that the plasma is created between the electrodes or in the gap between the electrodes if the electrodes are arranged perpendicularly (see the first paragraph of Section 6 of reference 2). With the invention as claimed, the plasma is created in the entire chamber volume, and not between the electrodes as there are no electrodes.

In the search report the examiner has indicated that one of the key words searched was "electrode". We submit that such a word is inappropriate as a keyword for patent search relevant to an apparatus that has no electrodes.

Yours faithfully

A handwritten signature in dark ink, appearing to read 'K. Callinan', with a long horizontal flourish extending to the right.

Keith Callinan
Patent Attorney

The demand must be filed directly with the competent International Preliminary Examining Authority or, if two or more Authorities are competent, with the one chosen by the applicant. The full name or two-letter code of that Authority may be indicated by the applicant on the line below:

IPEA/ AU

PCT

CHAPTER II

DEMAND

under Article 31 of the Patent Cooperation Treaty:

The undersigned requests that the international application specified below be the subject of international preliminary examination according to the Patent Cooperation Treaty and hereby elects all eligible States (except where otherwise indicated).

For International Preliminary Examining Authority use only

Identification of IPEA		Date of receipt of DEMAND	
Box No. I IDENTIFICATION OF THE INTERNATIONAL APPLICATION		Applicant's or agent's file reference 20401156KC	
International application No. PCT/SG2004/000210	International filing date (day/month/year) 13 JULY 2004 (13-07-04)	(Earliest) Priority date (day/month/year) 25 JULY 2003 (25-07-03)	
Title of invention AN APPARATUS AND METHOD FOR GENERATING UNIFORM PLASMAS			
Box No. II APPLICANT(S)			
Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country.) NANYANG TECHNOLOGICAL UNIVERSITY 50 Nanyang Avenue Singapore 639798		Telephone No. - Facsimile No. - Teleprinter No. - Applicant's registration No. with the Office	
State (that is, country) of nationality: SG		State (that is, country) of residence: SG	
Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country.) XU, Shu Yan c/o Nanyang Technological University 50 Nanyang Avenue Singapore 639798			
State (that is, country) of nationality: CN		State (that is, country) of residence: SG	
Name and address: (Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country.) OSTRIKOV, Kostyantyn c/o Nanyang Technological University 50 Nanyang Avenue Singapore 639798			
State (that is, country) of nationality: AU		State (that is, country) of residence: SG	
<input checked="" type="checkbox"/> Further applicants are indicated on a continuation sheet.			

Continuation of Box No. II APPLICANT(S)

If none of the following sub-boxes is used, this sheet should not be included in the demand.

Name and address: *(Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country.)*

TSAKADZE, Erekle
c/o Nanyang Technological University
50 Nanyang Avenue
Singapore 639798

State *(that is, country)* of nationality:
GE

State *(that is, country)* of residence:
SG

Name and address: *(Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country.)*

State *(that is, country)* of nationality:

State *(that is, country)* of residence:

Name and address: *(Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country.)*

State *(that is, country)* of nationality:

State *(that is, country)* of residence:

Name and address: *(Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country.)*

State *(that is, country)* of nationality:

State *(that is, country)* of residence:

☐ Further applicants are indicated on another continuation sheet.

Box No. III AGENT OR COMMON REPRESENTATIVE; OR ADDRESS FOR CORRESPONDENCEThe following person is ☒ agent ☐ common representativeand ☒ has been appointed earlier and represents the applicant(s) also for international preliminary examination.☐ is hereby appointed and any earlier appointment of (an) agent(s)/common representative is hereby revoked.☐ is hereby appointed, specifically for the procedure before the International Preliminary Examining Authority, in addition to the agent(s)/common representative appointed earlier.Name and address: *(Family name followed by given name; for a legal entity, full official designation. The address must include postal code and name of country.)*

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Agent's registration No. with the Office

☐ Address for correspondence: Mark this check-box where no agent or common representative is/has been appointed and the space above is used instead to indicate a special address to which correspondence should be sent.**Box No. IV BASIS FOR INTERNATIONAL PRELIMINARY EXAMINATION****Statement concerning amendments:***

1. The applicant wishes the international preliminary examination to start on the basis of:

☒ the international application as originally filedthe description ☒ as originally filed☐ as amended under Article 34the claims ☒ as originally filed☐ as amended under Article 19 (together with any accompanying statement)☐ as amended under Article 34the drawings ☒ as originally filed☐ as amended under Article 342. ☐ The applicant wishes any amendment to the claims under Article 19 to be considered as reversed.3. ☐ The applicant wishes the start of the international preliminary examination to be postponed until the expiration of 20 months from the priority date unless the International Preliminary Examining Authority receives a copy of any amendments made under Article 19 or a notice from the applicant that he does not wish to make such amendments (Rule 69.1(d)). *(This check-box may be marked only where the time limit under Article 19 has not yet expired.)*

* Where no check-box is marked, international preliminary examination will start on the basis of the international application as originally filed or, where a copy of amendments to the claims under Article 19 and/or amendments of the international application under Article 34 are received by the International Preliminary Examining Authority before it has begun to draw up a written opinion or the international preliminary examination report, as so amended.

Language for the purposes of international preliminary examination: **ENGLISH**.....☒ which is the language in which the international application was filed.☐ which is the language of a translation furnished for the purposes of international search.☐ which is the language of publication of the international application.☐ which is the language of the translation (to be) furnished for the purposes of international preliminary examination.**Box No. V ELECTION OF STATES**The applicant hereby elects all eligible States *(that is, all States which have been designated and which are bound by Chapter II of the PCT)*

excluding the following States which the applicant wishes not to elect:

Box No. VI CHECK LIST

The demand is accompanied by the following elements, in the language referred to in Box No. IV, for the purposes of international preliminary examination:

- | | | | |
|--|---|-------|--------|
| 1. translation of international application | : | _____ | sheets |
| 2. amendments under Article 34 | : | _____ | sheets |
| 3. copy (or, where required, translation) of amendments under Article 19 | : | _____ | sheets |
| 4. copy (or, where required, translation) of statement under Article 19 | : | _____ | sheets |
| 5. letter | : | 2 | sheets |
| 6. other (specify) | : | _____ | sheets |

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received	not received
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>

The demand is also accompanied by the item(s) marked below:

- | | |
|--|---|
| 1. <input checked="" type="checkbox"/> fee calculation sheet | 5. <input type="checkbox"/> statement explaining lack of signature |
| 2. <input type="checkbox"/> original separate power of attorney | 6. <input type="checkbox"/> sequence listings in computer readable form |
| 3. <input type="checkbox"/> original general power of attorney | 7. <input type="checkbox"/> tables in computer readable form related to sequence listings |
| 4. <input type="checkbox"/> copy of general power of attorney; reference number, if any: | 8. <input type="checkbox"/> other (specify): |

Box No. VII SIGNATURE OF APPLICANT, AGENT OR COMMON REPRESENTATIVE

Next to each signature, indicate the name of the person signing and the capacity in which the person signs (if such capacity is not obvious from reading the demand).


Keith Callinan
Patent Agent

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1. Date of actual receipt of DEMAND:

2. Adjusted date of receipt of demand due to CORRECTIONS under Rule 60.1(b):

3. ☐ The date of receipt of the demand is AFTER the expiration of 19 months from the priority date and item 4 or 5, below, does not apply.

☐ The applicant has been informed accordingly.

4. ☐ The date of receipt of the demand is WITHIN the period of 19 months from the priority date as extended by virtue of Rule 80.5.

5. ☐ Although the date of receipt of the demand is after the expiration of 19 months from the priority date, the delay in arrival is EXCUSED pursuant to Rule 82.

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Demand received from IPEA on:

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FEE CALCULATION SHEET

Annex to the Demand

International application No. PCT/SG2004/000210	For International Preliminary Examining Authority use only
Applicant's or agent's file reference 20401156KC	Date stamp of the IPEA
Applicant NANYANG TECHNOLOGICAL UNIVERSITY; XU SHU YAN; OSTRIKOV KOSTYANTYN; TSAKADZE EREKLE	
CALCULATION OF PRESCRIBED FEES	
1. Preliminary examination fee	AU\$550.00 P
2. Handling fee (<i>Applicants from certain States are entitled to a reduction of 75% of the handling fee. Where the applicant is (or all applicants are) so entitled, the amount to be entered at H is 25% of the handling fee.</i>)	AU\$218.00 H
3. Total of prescribed fees Add the amounts entered at P and H and enter total in the TOTAL box	<div style="border: 1px solid black; padding: 5px; width: 150px; margin: 0 auto;"> AU\$768.00 </div> <div style="border: 1px solid black; padding: 2px; width: 150px; margin: 2px auto;"> TOTAL </div>
MODE OF PAYMENT	
<input type="checkbox"/> authorization to charge deposit account with the IPEA (see below)	<input type="checkbox"/> cash
<input type="checkbox"/> cheque	<input type="checkbox"/> revenue stamps
<input type="checkbox"/> postal money order	<input type="checkbox"/> coupons
<input checked="" type="checkbox"/> bank draft	<input type="checkbox"/> other (specify):
AUTHORIZATION TO CHARGE (OR CREDIT) DEPOSIT ACCOUNT <i>(This mode of payment may not be available at all IPEAs)</i>	
<input type="checkbox"/> Authorization to charge the total fees indicated above.	IPEA/ _____
<input type="checkbox"/> (<i>This check-box may be marked only if the conditions for deposit accounts of the IPEA so permit</i>) Authorization to charge any deficiency or credit any overpayment in the total fees indicated above.	Deposit Account No.: _____
	Date: _____
	Name: _____
	Signature: _____